

# Literacy in virtual worlds

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Introducing new digital literacies into classroom settings is an important and challenging task, and one that is encouraged by both policy-makers and educators. This paper draws on a case study of a 3D virtual world which aimed to engage and motivate primary school children in an immersive and literacy-rich on-line experience. Planning decisions, early experimentation and the experience of avatar interaction are explored. Using field notes, in-world interviews and observations I analyse pupil and teacher perspectives on the use of digital literacy and its relationship to conventional classroom literacy routines, and use these to trace the potential and inherently disruptive nature of such work. The paper makes the case for a wider recognition of the role of technology in literacy and suggests that teachers need time for experimentation and professional development if they are to respond appropriately to new digital literacies in the classroom.

The inter-relationship between literacy and technology stands out as one of the major strands of educational debate in the early 21st century. Alongside the substantial and growing body of scholarly work in the field, governmental policy and curriculum guidance repeatedly address the topic of how learning and teaching might be improved or transformed by new technology. More often than not the practical concerns and challenges of classroom implementation are overlooked. In what follows I argue that a curriculum that is infused with new technology is one that is obliged, sooner or later, to acknowledge and explore how technology changes the texts that are produced and consumed in educational contexts – how literacy itself is changing. The proposition quite succinctly put is that ‘literacy teaching and learning need to change because the world is changing’ (Cope & Kalantzis, 2000, p. 41). But also, I argue that this change involves new kinds of communicative relationships between students, and between students and their teachers, and in this sense digital literacy can have a destabilising effect on traditional classroom routines. Using evidence from a case study of a primary school project involving 3D virtual world play, I explore some of the discontinuities between new digital literacy practices and the more established classroom routines of literacy instruction.

## **‘Digital literacy’ or ‘literacy and ICT’**

Terms like ‘new literacies’ (Lankshear & Knobel, 2003), ‘multiliteracies’ (Cope & Kalantzis, 2000) and ‘technoliteracy’ (Marsh, 2003) are used in the literature for

talking about the ways in which new technologies intersect with changing practices in meaning-making in the contemporary world. Here I use the term ‘digital literacy’, having argued elsewhere that a clear understanding of this term might be helpful in a principled exploration of the terrain (Merchant, 2007a, 2007b). I suggest that the central concern of digital literacy is reading and writing *with* new technologies – technologies which involve the semiotic of written representation – recognising that on-screen texts invariably combine writing with other modes of representation.

Digital literacy is an umbrella term for a set of social practices that are interwoven with contemporary ‘ways of being’ (Markham, 2004). This perspective acknowledges and builds on the work of the new literacy studies (NLS). In an overview of the NLS, Barton (2001) suggests that:

‘nearly all everyday activities in the contemporary world are mediated by literacy and that people act within a textually mediated social world’ (Barton, 2001, p. 100).

It is clearly the case that an increasing number of the everyday activities Barton refers to are now mediated through screen-based literacies. Of course, print still has a key role to play in many activities – and it is certainly not in danger of dying out – but at the same time it is hard to ignore the fact that digital literacies have transformed many everyday practices both in informal and formal contexts.

In the United Kingdom, the tendency to look at educational uses of new technology in terms of their capacity to enhance the learning of traditional literacy skills is well documented (Burnett, Dickinson, Merchant & Myers, 2006; Lankshear & Knobel, 2003; Larson & Marsh, 2005). In classrooms this is manifest in some uses of Interactive Whiteboards (Shenton & Paget, 2007), and in the research community in a limited view of what is at stake. The separation of literacy from its technological means of production has come under repeated challenge in recent theoretical and research literature. Cope and Kalantzis (2000), Kress (2003), Gee (2004a, b) and Lankshear and Knobel (2006) have conceptualised the emergence of new kinds of literacy whereas studies such as Marsh (2003), Facer, Furlong, Furlong and Sutherland (2003) and Merchant (2006) have helped to develop our understanding about how new literacy practices are impacting on the lives of children and young people. The challenge for the classroom is how to make educational use of the new literacy practices. This may not simply be a matter of enhancing classroom practice but may need a more transformational pedagogy (Burnett et al., 2006; Squire, 2002).

The separation of literacy and ICT has tended to stand in the way of progress in the classroom. In the United Kingdom, the Primary Framework for literacy (DCFS, 2006) provides teachers with plenty of opportunity to incorporate digital literacy, but the framework itself describes a linear (and singular) model of literacy, policed by high stakes testing and other accountability measures. When teachers, who are a necessary part of this system, are faced with fundamental challenges in what actually constitutes literacy, the result may be destabilising; they may well be driven back to what is measurable and tested – the print literacy practices that remain the benchmark of professional accountability. Innovative digital literacy practices such as those involved in virtual world game play can easily disrupt classroom routines and call into question deeply held assumptions about literacy, about literacy instruction and even the teacher–pupil relationship that lies at the heart of the educational process.

But somehow or other a shift of emphasis is needed if the experience of school students is to keep pace with the changing face of digital literacy in the outside world. In order for this to happen we need a wider recognition of the role of technology in literacy. We need to understand that the production and distribution of written text depends on technology and that the history of writing is, at least in part, a history of technology. As digital communication begins to infuse daily life, the role of literacy in mediating interactions in our social world is changing. To date, there has been relatively little exploration of the literacies of 3D virtual worlds. In what follows I look at the experience and challenges faced by consultants, teachers and pupils in an exploration of digital literacy in educational virtual world play.

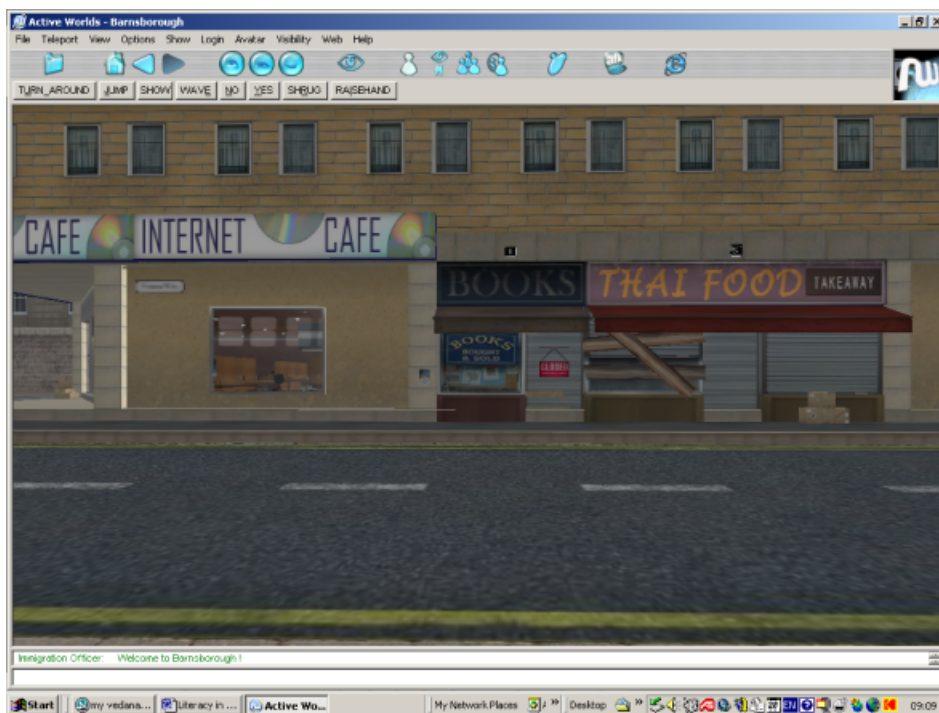
### **Virtual worlds**

The project described here was initiated by Barnsley Metropolitan Borough Council (Barnsley MBC) in 2006, and aimed to raise boys' attainment in literacy at Key Stage 2. In partnership with the company Virtually Learning (<http://www.virtuallylearning.co.uk>), the project team – a group of education consultants and teachers – designed a literacy-rich 3D virtual world which children explore in avatar-based game play (Dovey & Kennedy, 2006). The children work collaboratively to construct their own narratives around multiple, ambiguous clues located in the world and, in doing this, engage in both on- and off-line literacy activities. The virtual world, called Barnsborough, is a three-dimensional server-based environment which is explored from multiple but unique perspectives through local Active Worlds browsers (see Figure 1). Navigational and communicational tools are built into the browser, enabling participants to move around in virtual spaces such as streets, buildings and parks, to engage in synchronous written conversations, and discover clues and build their own narratives.

Pupils in 10 different project schools have been using avatars to explore the world, using conventional keyboards and interacting with each other in the synchronous chat facility (see example below). The world itself consists of a number of interconnected zones which are lifelike and familiar – they are modelled on real-world objects. The zones include a town, complete with streets, alleyways, cafes, shops and administrative buildings. There is also a park with a play area, bandstand, boating lake, mansion, woodland and hidden caves; a residential area with Victorian and contemporary housing, a petrol station and various local amenities and an industrial zone with old factories, canals and so on. In some of the connecting zones pupils may encounter other sites such as a large cemetery, a medieval castle and a stone circle.

Rich media, tool-tips, hyperlinked and downloadable texts provide clues about the previous inhabitants of Barnsborough, suggesting a number of reasons why they have rather hurriedly abandoned the area. Some possible storylines include a major bio-hazard, alien abduction, a political or big business disaster or suggest something more mysterious. The planners have seeded these clues throughout the Barnsborough environment. Barnsborough, like other virtual environments is, in summary, a high-resolution graphic environment which provides a stimulating environment for on-line exploration and interaction.

The initial aim of the project was to provide a place to enact loosely structured open-ended and multilayered narratives, although as time moves on, as we shall see, exploration has become more consistently anchored to classroom literacy routines. The virtual world continues to be used in the literacy curriculum in Year 5 and 6 classes in



**Figure 1.** Barnsborough street scene showing the Active Worlds browser.

Barnsley. While debates about the educational worth of virtual world game play and video gaming attract considerable attention, empirical research that investigates their learning potential in classrooms is still in its infancy. Although there are a number of claims about high levels of learner engagement (Squire, 2002) and the construction of ‘powerful learning environments’ (Dede, Clarke, Ketelhut, Nelson & Bowman, 2006) there is clearly scope for more work in this area. Researchers have claimed that these immersive environments may lead to distraction and loss of focus (Lim, Nonis & Hedberg, 2006), but as yet there is insufficient evidence to reach firm conclusions. Early studies such as those of Ingram, Hathorn and Evans (2000) focused on the complexity of virtual world chat, and Fors and Jakobson (2002) investigated the distinction between ‘being’ in a virtual world as opposed to ‘using’ a virtual world, a theme which is explored later in this paper.

The work of the Vertex Project (Bailey & Moar, 2003), which involved primary school children in the United Kingdom, most closely matches the Barnsborough initiative. However, although the Vertex Project report makes some interesting observations on avatar game play, it focused on the skills involved in building virtual objects rather than digital literacy. Despite this difference, a common theme that unites these studies is the need for a carefully considered and complementary pedagogical context.

### **The case study**

Literature on research methodology in the social sciences is frequently concerned with philosophical questions concerning ‘the reality’ of a particular situation and the relative

significance of the meanings or interpretations of the various actors and researchers involved (Denzin & Lincoln, 2003). When part of the reality of the situation is virtual, and the actors and researchers are both physically embodied and actualised in the virtual world as avatars, the research context immediately becomes more complex. Researching digital literacies thus presents new challenges, as well as foregrounding familiar research problems (Nixon, 2003). This case study is based on the notion that the educational use of a virtual world draws on a number of layered and inter-related social realities. These social realities are outlined below.

Firstly, in researching a virtual world, such as the one described here, it is necessary to understand the architecture of the environment itself as a complex 3D multi-modal text – a reality that has been constructed by the planners and designers. In addition to this it is necessary to make sense of how meanings are subsequently made by the teachers and children involved, as well as their avatars that populate the world. Teachers and children in this project inhabit at least three inter-related social realities. These are the social reality of the literacy lessons; the social reality of the computer sessions in which they explore the world; and the social reality of the virtual world itself. In the last of these three, teachers' and children's avatars have an ambiguous existence – being both *of* the classroom (or computer suite) and *not of the classroom* – appearing on monitors in their own school, in other schools and elsewhere. Technically speaking, of course, they are chunks of information running on remote servers (another sort of reality) but, as I go on to discuss, the user may experience things rather differently.

Into each of these realities children and teachers import their own social capital, prior experience and values as they interpret the experiences, artefacts, expectations and norms of each environment and negotiate their various understandings. Researching the perspectives and understandings of teachers and children involves looking at aspects of these three social realities, and attempting to read them in relation to one another. The case study material constitutes my attempts to do just that, and includes an exploration of the project from a number of perspectives including classroom observations, in-world avatar interviews with teachers and pupils and an analysis of the planning process built from my own field notes and minutes of meetings. This material was collected over an 18-month period.

The case study also draws on some observational data of interaction in the world, but there are some concerns about this as an approach. Observing interaction in a virtual world may seem like an obvious starting point, but it is problematic in a number of ways. Firstly, in order to actually see interaction in context, one needs to be part of that context itself – and that involves a level of participation. As researcher, one has to enter the virtual world as an avatar – an avatar whose presence is rapidly perceived by others, and quickly becomes part of the flow of events taking place. In other words, the researcher disrupts the very nature of the interactions he or she seeks to observe. In this way a very familiar research dilemma is reproduced in the virtual world. The researcher begins to change the reality that he/she is trying to interpret (Rosaldo, 1989). However, another option is available to the researcher. With administrator rights, one can become invisible – hide round corners, behind walls, under the ground and so on. Other avatars will normally be unaware of one's existence. Piloting this was a strange experience. Although I could easily become an 'objective' non-participant observer, I would still have all my beliefs and assumptions and even a presence, as an avatar – albeit an invisible one! But this ideal-sounding position was simultaneously ethically dubious, emotionally uncomfortable and methodologically questionable.

In order to capture the distinctiveness of on-line interaction, this case study draws on the more contained experience of in-world group interviews with children (nine sessions in total), and similar individual interviews with teachers (five in total) conducted over a 6-month period. In each case both the researcher and the subjects were embodied as avatars. This not only enabled me to look at some key themes from an alternative perspective, it also allowed for a more contextualised discussion about aspects of the virtual world and the experience of avatar interaction itself. Clearly, positioning oneself as ‘avatar-researcher’ raises new methodological issues, but that is not the subject of this paper. Broadly speaking the approach adopted here involves an exploration of what Markham (2004, p. 97) describes as ‘the context of social construction’, the negotiations of meanings, identities and relationships that occur discursively in and around the virtual world.

### **Creating and controlling the world**

Planning the virtual world involved a small group of literacy and drama specialists, ICT advisory staff, primary school teachers and myself as consultant and researcher. Knowledge and first-hand experience of this sort of environment was minimal. In our initial meeting the concept of exploring a ‘*computer world with aviators [sic]*’ was described, as we tried to find a common language to describe what was envisaged. The process of planning the virtual world was carefully tracked in my own field notes and in minutes of meetings. In this section I draw mainly from these sources in identifying some pervasive themes. These are the design of the environment, the texts developed, views on appropriacy and the limitations that were imposed.

#### *The environment*

As Schroeder (2002) observes, virtual worlds and the avatars that inhabit them not only create possibilities in terms of places, identities and social lives, they also limit them. Designing such a world simultaneously involves acts of creation and control. In our initial meetings it quickly became clear that there was strong commitment to the idea that the world would actively engage pupils who were sometimes ‘hard to reach’, as well as providing a motivation to use literacy in a variety of purposeful ways. After some discussion we decided to design a contemporary urban environment. Barnsborough would have the feel of a slightly run-down modern urban environment (see Figure 1) with some pockets of prosperity. It would partly reflect pupils’ everyday reality, but also incorporate some features more reminiscent of urban video games. The town’s surrounding areas would be suburban and semi-rural in feel. Clearly this opened certain possibilities, but as Schroeder’s (2002) comments suggest, it closed down others.

These and subsequent design decisions were based on what the adult planners *imagined* that children would respond to best. In this sense we were creating a world which we thought children would wish to inhabit. There are interesting parallels here with the ways in which literacy classrooms and other learning environments are designed. In an educational environment that is dominated by statutory curricula, and the associated discourses of learning objectives and measurable outcomes, it is easy to overlook how often educators’ decisions also include views about what will be ‘good’ for learners in a more general sense, and what they think will capture pupils’ interest. These views associate with the ways in which orderliness and legitimacy are invariably imposed by adults in authority and the pervasive notion that a classroom community has only

successfully been created when teachers succeed in establishing a unified social world (Pratt, 1991). This is a theme I shall return to later, for it embodies a set of assumptions that are troubled by new technology and the associated digital literacy practices.

### *Texts for teaching*

Having decided upon the environment, the planning group's attention turned to the construction of narrative clues, and particularly to writing content for the tool-tip clues, hyperlinked and downloadable texts. For the most part the kinds of texts produced for the world were referenced to the genres in the literacy framework (DCSF, 2006) – governed, as we were, by the challenge to raise attainment in literacy. However, other text types included 'new' digital texts (txt-messages, MSN-type chat, audio and video clips) and environmental graffiti. One of the participating teachers commented that these were 'new genres' of writing and was key in establishing this perspective with participating teachers. Despite this, field notes show how ideas were continually reframed by teachers to create texts that could be *taken out* of the world and used in conventional literacy routines.

I'm primarily interested in what the children will do in the world . . . others around the table seem more interested in what children will get out of the world. We have different understandings of literacy (and in particular of digital literacy). *Fieldnote 26-09-06*

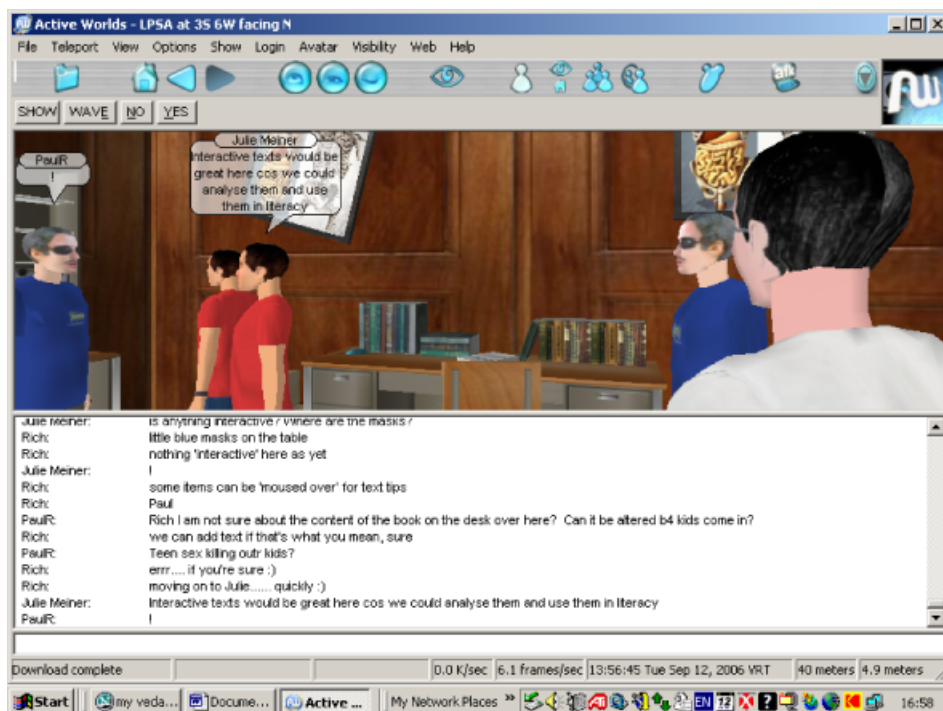
This emphasis on conventional literacy routines sometimes led to an undervaluing of literacy *in* the world. The teacher avatar's comment in an in-world planning meeting (Figure 2): 'Interactive texts would be great here cos we could analyse them and use them in literacy' provides a useful illustration of this tension. The comment implies that on-line text only becomes truly educational once it is deployed in the familiar pedagogical routine called 'literacy' teaching.

### *Appropriacy*

Notions of appropriacy were quick to surface in the planning process. Occasionally material placed in the world by the technical team was seen as unsuitable for the age range. For example, in the meeting captured in the Figure 2 screenshot, there was a book on the table with the title 'Is teen sex killing our kids?' It was changed following the comment 'Can it be altered b4 the kids come in?' This episode reflects a persistent concern with the safety of the 3D virtual world, and the appropriacy of digital text.

Barnsborough is a heavily protected place. Only 10 schools and the planning team have access, but nonetheless safety is seen as a key issue and regularly surfaced as a topic for conversation. Painstakingly the planning team made sure that everything was safe enough for the school environment. In addition to this there were concerns about pupil interaction – bullying, verbal abuse and inappropriate behaviour. The tensions that arose are captured in field notes:

We're currently wrestling with questions about the supervision/monitoring of children's chat. At the sharp end, these are questions about children's safety and teachers' responsibilities . . . but they are pitted against notions of pupil autonomy and teacher control, as well as the wish to provide children with rich experiences of new literacies. *Field note 16-01-07*



**Figure 2.** The Planning Group in Barnsborough Town Hall.

When Barnsborough is fully populated it is possible that anything up to 300 users could be on-line at one time. More probably it would be two or three classes from different schools, but still difficult to monitor, if indeed monitoring is what teachers need to do.

### *Limitation*

As the planning team became more familiar with virtual world game play, their own enjoyment of rapid and sometimes chaotic chat, coupled with unrestricted movement and exploration, often created a heady atmosphere. The free-form nature of this game play presented a direct challenge to professional sensibilities. Convinced that children would enjoy Barnsborough as much as they themselves were beginning to, the planners began to wonder how they would control a class of youngsters who would undoubtedly be simultaneously more dextrous with keyboards and more unruly in their behaviour.

Relatively early on in these discussions it was agreed that the fly function should be disabled for children. It was also agreed that other possibilities such as sending one-to-one telegrams (in-world emails) and whispering (one-to-one chat) would not be introduced to the children. Teleporting, which allows for instant transfer from one location to another, by now used routinely by planners, would also be 'kept secret'. And finally it was agreed that, at least in the initial stages, the town zone of Barnsborough would be sealed off. Children would enter through the sewers and would be free to explore the town, but not allowed access to other zones in the first instance. This

would help teachers to retain control, but more importantly to point children in particular directions and engage in activities that would tie in to more traditional literacy activities.

Our perceived responsibility as educators meant that, in the name of safety and professional compliance to a particular discourse about literacy, we created a walled garden – a closed system that would make surveillance easier and learning more controlled. In short we constructed boundaries that could be policed in an attempt to recreate our vision of a unified social world (Pratt, 1991) complete with its sanctioned behaviours and literacy practices.

### Acts of transgression

The very act of taking virtual world game play to school clearly raises some important issues for teachers. The interview data suggest that the whole concept of game play as a context for learning seemed to be alien to most of the teachers involved. And so it was not too surprising to find that interaction in the world of Barnsborough often mirrored the world of the classroom, and that virtual world activity was repeatedly perceived as a stimulus for the real work that would follow. As a result digital literacy was marginalised in favour of traditional forms of literacy. The rule-bound world that began to take shape has been described above, but where there are rules there are also transgressions. In this section I document some of these.

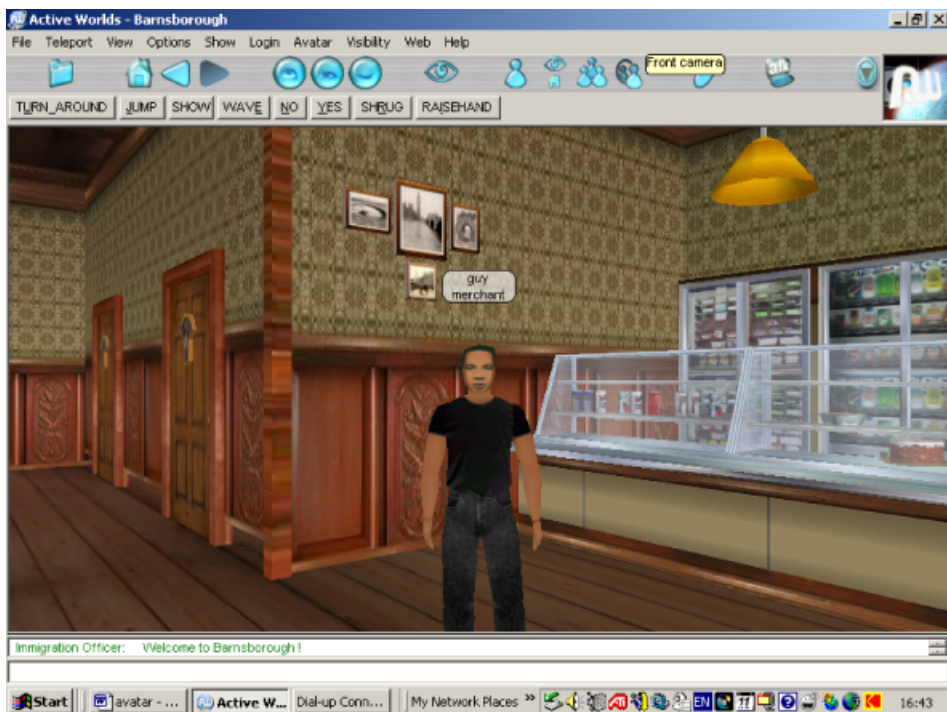
The Barnsborough environment was designed for exploration, but unfettered exploration was seen as too difficult to contain and too chaotic for the school context. In an attempt to address these perceived problems Barnsborough town was initially sealed off, so that child-avatars could not explore the park area and what lay beyond. However, it was not long before children discovered that by climbing up on objects, they could launch themselves over the wall, landing on the other side, as the gravitational pull of the virtual world brought their avatars back down to ground level. Staff from Virtually Learning had to step in to ‘drag’ the escaped avatars back to the town. Perhaps these avatars were to become the first truants in a virtual world! In designing Barnsborough, teachers were keen to avoid any suggestions of violence and agreed early on that there should be no weapons in the virtual world. Avatars would also not be able to perform any routine aggressive actions (such as karate kicks). Nevertheless many of the children drew on their experiences of video gaming in the virtual world. In one observed interaction, a child avatar excitedly announced that a gun had been found – lying on the ground – *‘I tried to pick it up but I couldn’t’*. Arming one’s avatar by collecting weapons is, of course, a popular theme in video games and it is not surprising to see this strategy applied to this context. Harmless though this episode was, it illustrates a subtle kind of transgression in that it operates from a different set of rules and assumptions.

In a similar way, some teachers subverted the focused in-world activities that had been generated by members of the planning group. A common example of this was the use of the ‘hide-and-seek’ game, in which one of the avatars would hide and then others would be challenged to locate them. This playful interaction, and the on-screen texts that it generated, was starkly different to some of the more teacher-directed sessions in which the discourse patterning more closely resembled classroom talk. In the following extract we see this at work, and later, pupils exchanging tips about short-cuts to perform the hidden functions of flying and running (T is the teacher):

KM: GA do you know how to run?  
 GA: probely why do u wanna no  
 KM: No  
 JB: A let's pla hid 'n' seek  
 KM: its altgr and the up button  
 T: Bet you can't find me JB!  
 GA: bet i can  
 JB: gis sum clus wire yu ar  
 MH: JP how do you fy  
 JB: f  
 JB: f12  
 JP: keep tapin it

A final example of transgressive behaviour stems from the use of avatars. Much has been written about avatar embodiment as a means of representing oneself, particularly in the unrestricted world of open access on-line game play. Although Barnsborough avatars cannot be customised by users, they have distinctive visual characteristics that mark age, gender and ethnicity (see Figure 3). This has led to some interesting interactions, some of which are captured in field notes.

... how our avatar looks and dresses attracts attention. I was interested to note yesterday how children working were concerned about the gender of their avatar and offered each other on-line guidance on how to select a more appropriate one.



**Figure 3.** The Merchant as a child avatar in Trinity's cafe.

But not only that, our teachers too were trying on different bodies, checking each other out, rotating etc. – ‘how does my bum look in these dungarees?’ *Field note 9-05-07*

As the project has developed, the complexities of avatar interaction have attracted more attention, and this is a theme I return to later.

### **Digital literacy**

Barnsborough is an immersive textual universe which offers a ‘constellation of literacy practices’ (Steinkuehler, 2007, p. 297). Verbal texts embedded in the virtual world are listed below. These were not directly studied or used back in the classroom, with the exception of the hyperlinked texts, which were often used to support formal literacy instruction.

#### *Environmental print*

This material forms part of the texture of the 3D virtual world and is designed to create a real-world feel to the visual environment and also to provide children with clues. Examples of this include shop signs, graffiti, logos, posters and advertisements.

#### *Tool tip clues*

These give additional explanations or commentaries on in-world artefacts and are revealed when ‘moused over’ with the cursor. Tool tip messages draw attention to environmental features (‘looks like someone’s been here’) or carry navigational information (‘you’ll need a code to get in’).

#### *Hyperlinked texts*

Mouse-clicking on active links reveals a more extended text. Examples include an oil-drilling proposal (a Word document); a child’s diary (a Flash document); and a web page on aliens. Some of these links are multimedia (such as phone messages and music clips) whereas others provide examples of different text types, such as text messages and on-line chats.

#### *Interactive chat*

This is the principal means of avatar interaction and involves synchronous chat between visitors to the world. This is represented as speech bubbles above the avatars’ heads and in scrolling playscript format in the chat window beneath the 3D display (see Figure 2).

The inclusion of these features meant that pupils were given an immersive experience of digital literacy as well as the sense of a place that they could explore. When interviewed, they were vociferous in their enthusiasm for Barnsborough:

*JB: its mint i like barnsbrough because its really adventurous its abosolutly brilliant MINTUS!!*

KC: *its a mystery*  
 JM: *i like it because u get to explor the town*  
 guy: *um*  
 JB: *\*brilliant*  
 guy: *what's your favourite place?*  
 JB: *thinternet café*  
 guy: *tell me why?*  
 JB: *\*internet café*  
 KC: *town hall*  
 JB: *i like internet cafe because lots of uknown thing have happened in there*

It is not simply that this virtual experience is 'brilliant'; the extract also shows how the children are learning about the conventions of on-line chat (note JB's correction of her typo 'brilliand' to '\*brilliant' as marked by an asterisk in front of the corrected spelling). When asked about the chat function they repeatedly described it as 'cool', that they 'like it a lot', with some arguing that it helps you to learn how to type faster. Some of the teachers also saw the benefits of this kind of interaction – one even suggested that children's use of chat had developed over time.

AC: *... the chat is reading and writing without the children realising. The way the chat has developed over the course of the units has reflected this*  
 guy: *can you say how it has changed?*  
 AC: *Gone from the text/chat language and the 'Hi' to children actually using it as a method of finding things out from each other and discussing issues raised from the world or the work set*

More explicit teaching in the world, using the chat function, was explored by some of the project schools. These chat data are interesting in the way that they replicate the characteristic features of spoken discourse in classroom settings. In the following extract, the teacher has led her class into the park zone. Here there are some formal gardens, a play area with swings and a roundabout. Children also notice the bandstand situated next to the lake (here referred to as the 'poned'). The teacher allows the children to explore – there is a considerable amount of avatar mobility – but also attempts to keep them focused. Trying to imagine how the park was is the explicit aim, reinforced at the start. The pattern of teacher questioning and feedback is quite familiar, as are the moves to keep children on task, evidenced in the response to J's question about avatars. If it were not for the fact that this conversation was digitally mediated it might seem rather unremarkable.

T: *... remember what the focus of this lesson is! What was the park like before whatever happened happened?*  
 SS: *we think it must have been busy*  
 T: *What makes you think that S?*  
 CM: *mm-there are some cake on the band stand so people must have been eating while playing*  
 T: *Excellent observation C.*  
 LF: *go to the poned jm*  
 DC: *I bet some elders would admire the flowers*

- CM: .0  
 SS: *because it says there is a public meeting in the park*  
 T: *What did you want me to look at/*  
 JB: *why are other people names on avater*  
 T: *J – you should not be messing with the avatar function. Keep focused on what we are supposed to be doing!*  
 T: *There are a lot of you up in the playground. What have you discovered?*  
 LS: *i bet the children liked the park*  
 CR: *i bet the people would of liked the smell of the picnic*  
 T: *Why do you think that L?*  
 SS: *i bet people must have sat and watched the bands play and clap for them*  
 T: *Wonderful S – what kind of atmosphere would that have created? How would people feel?*

Despite the fact that some teachers saw the immersive on-line experience as ‘literacy by stealth’ in that they recognised how children were engaged in literacy practices through their playful engagement and exploration of the world, interview data suggest that it was primarily seen as a stimulus for more traditional literacy work. Usually, when speaking of the benefits of the virtual world work, these were indexed to improvements in print literacy and related practices such as speaking and listening. Given this emphasis and the simple fact that hyperlinked and downloadable texts were cross-referenced to Primary Framework (DCFS, 2006) objectives, traditional literacy skills were privileged. Not surprisingly this was also quite clear from the pupils’ perspective – they were also well aware that they were ‘doing literacy’ as this second interview extract reveals:

- SJ: *weve done loads of things on barnsborough*  
 GP: *its good real good*  
 guy: *yes GP*  
 SJ: *newspaper repots taking notes flash back story loads!!*  
 GB: *we have been doing notes writing reports and doing a flashback story*

This extract is interesting because, in describing what they have done in Barnsborough, the children fall back on a description of ‘text types’ using the discourse of curriculum literacy. It appears that they have tacitly accepted the teacher model of using the virtual world as a stimulus for classroom literacy, rather than as a literacy experience in and of itself. Placed alongside teacher comments such as:

- VL: *the children produced quality work from the sessions*  
 and,  
 PD: *It provided a useful basis for report writing*

it emerges that the dominant model was clearly one which recruited digital literacy to serve existing curriculum goals. Perhaps this is a starting point, but one that restricts the ambition of creating a textual universe to what another teacher described as a ‘*very good tool for integrating ICT into the literacy curriculum*’.

### Avatar play

Unlike other virtual world environments, such as Second Life, it is not possible to customise one's avatar in Barnsborough, and so teachers and children choose an off-the-shelf avatar from a drop-down menu. Barnsborough users, then, do not necessarily identify with the same avatar on each visit. However, the sense of being embodied in the virtual world is still strong and compelling.

The virtual environment has an immersive quality, and quite quickly exploration feels less like controlling a figure on a screen and more like being 'in' a world. On some occasions it can actually feel as if one's avatar has taken on a life of its own. This phenomenon is well documented in the literature (Dovey & Kennedy, 2006; Schroeder, 2002) and is diagrammatically represented in Figure 4. Here, I distinguish between actual on-screen appearance or 'presence' and the experiential dimension of 'being there'. While the phenomenon of presence is dependent upon the technology, one's state of mind is – as always – dependent on a complex web of influences, some of which are external to the game play itself. When technology and presence are experienced in a state of mind similar to creative 'flow' (Cziksztentmihalyi, 2000), the result is the impression of 'being there'. My own experience suggests that the state of 'being there' begins to emerge after a period of immersion and exploration. This sense is heightened when one is engaged in exploration or verbal interactions with others in the virtual world.

Since this virtual world has been conceived as an educational environment, it seemed important to get a picture of how children and their teachers regard avatar game play. I was interested in finding out to what extent their actual selves and respective school roles were involved, and whether, like me, they ever had the experience of 'being there'. Data from in-world avatar interviews are used to explore these ideas.

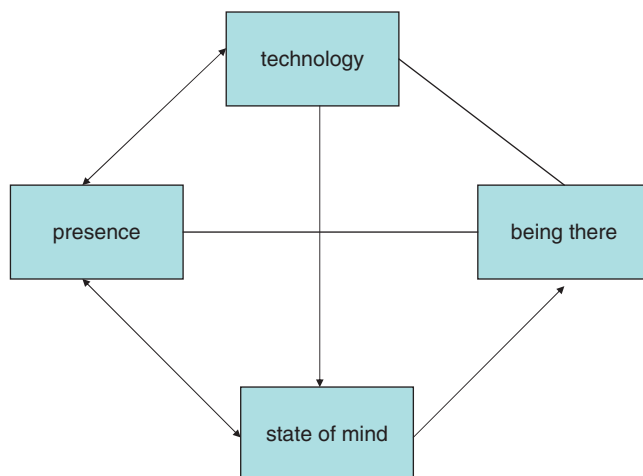
In the first extract children talk excitedly, if a bit superficially about their avatars.

guy: *I want to know about the avatars*  
 LW: *wot du hek dus that mean*  
 JB: *do you mean what we look like#*  
 JB: *?*  
 guy: *Yep*  
 JB: *Kk*  
 LW: *\$*  
 JB: *i think i look good!!*  
 KC: *there reale cool*  
 JB: *they are really mint*  
 LW: *no yu don't*  
 JM: *i look good*

At this point, they are concerned about the visual characteristics of the avatars describing them as 'good', '\$', 'cool' and 'mint' – all positive descriptors in their terms. A little later in the same discussion, JB asks:

*JB: i think they look really good BUT WHO ARE THEY????????????? thats the question*

This seems to suggest that the girl in question doesn't seem to see the avatar as herself – rather as a character in the world that she controls. Trying to probe deeper I appear to be making little headway.



**Figure 4.** Factors that create the impression of ‘being there’.

guy: so how does it feel to be a character like that?  
 DC: mint  
 JB: mint  
 KC: wierd but cool  
 guy: in what way?  
 DC: just cool  
 JM: it feels werd but cool  
 guy: Weird ... how?  
 JB: well it feel good not to be doing work and being in the computer sounds fun!!!!!!!!!!  
 LW: Comfyyyy\*\*\*  
 KC: because you can you see your self  
 guy: ah that's interesting  
 DC: Ye  
 guy: say more. . . .  
 JM: you carnt berleav it

These children's comments appear to give a sense of the ambiguity of presence. ‘You carnt berleav it’ and the repetition of ‘werd’ (weird) indicate something like this, whereas JB’s ‘being in the computer’ and KC’s ‘seeing your self’ suggest the experience of being there. It is tempting, of course, to interpret these comments in the light of theory but they must, at this stage, remain at the level of conjecture.

Teachers views of their avatars are likely to vary according to their purposes for being in the world. So, in the teacher interview below we see Jade reflecting on the teacher-avatar role and how it subtly alters her real-world relationship with the children.

guy: I'd really like to know what it's like being a teacher in the world  
 Jade: I love it! It makes my Literacy lessons so enjoyable! The children really like the fact that I am on ‘the same level’ as them.  
 Jade: I love watching the children in the lessons. you can see it on their faces how much they are getting from it

- guy: *good ... Are you Jade or your avatar when you're in the world?!*
- Jade: *I am in the world as 'Jade Morgan' but the children have never asked directly what my role is. They know how to attract my attention if they want to speak directly to me. I am not really sure how they see me – that could be a question for the kids!*
- guy: *mmm i wondered how you felt ... maybe too hard to say ...*
- Jade: *Yes! I oversee what the children are doing and make sure that they are remaining on task but because I am doing all that within Barnsborough it is not like I am 'the teacher'. I don't think the children feel as threatened (not sure that thta is the r*
- Jade: *\*right word*
- guy: *Ok, and I guess there are conrol issues*
- guy: *\*control*
- Jade: *Yes – but not in the same way as in a classroom. The world makes that control much more flexible as the children are actively encouraged to make their own decisions and find things out for themselves.*

Although Jade is 'overseeing' the children in this context and making sure that they remain 'on task', the characteristics of the virtual world seem to lead to a more equal relationship. Furthermore, the exploratory nature of much of the activity designed into Barnsborough lends itself to a more collaborative problem-solving approach. Although conventional classroom relationships tend to be reproduced in the world, some of the design features open up alternative possibilities for pupils and teachers. The hide-and-seek episode described above serves as a further illustration of how teacher avatars may be tempted to explore a rather different, even playful, relationship with children in the world.

These initial observations suggest interesting possibilities and indicate that avatar game play has plenty to offer to innovative teachers as well as researchers. In this project, both children and adults are relative newcomers to virtual world game play and the full potential of distributed activity and interaction has yet to be systematically explored. Neither pupils nor teachers seem to be experiencing the fully immersive state of 'being there', but regularly refer to Barnsborough in terms of a shared reality – a *place* albeit a virtual one, which holds a particular magic for them.

## Discussion

Work on the Barnsborough project has raised a number of significant issues. A constant theme in the work concerns the sorts of literacy learning environment that teachers and other adults design for children, and the extent to which these designs assume a consensual social world (Pratt, 1991). This theme runs through from the original plans and into implementation and suggests that exploration of learning through digital literacy is constrained by professional concerns and the more general educational climate in which they are embedded. Policy impacts directly on the kinds of literacy that are privileged in teachers' interpretations of curriculum goals and their perceived professional responsibilities with respect to these goals. The virtual world experience foregrounds some key dilemmas relating to engagement with digital literacy in the classroom. The most significant of these dilemmas stem from the fact that a 3D virtual

environment introduces pupils and teachers to new ways of interacting with one another. So, for instance, in-world pupil–pupil interaction is not only conducted in the emerging informal genre of interactive written discourse (Ferrara, Brunner & Whittemore, 1991), it also disrupts ideas of conventional spelling, turn-taking and on-task collaboration. New relationships with teachers, pupils from different schools and other adults also emerged during the course of this work. Issues about authority and what is appropriate in this sort of environment were quick to surface, which in turn raised issues for teachers who were often legitimately concerned about the safety of their pupils and how they might monitor children's on-line experiences and interactions. On-screen digital practices can therefore give rise to uncertainty, particularly where these practices do not easily fit into established classroom routines.

In these and other ways, digital literacy can have a destabilising effect in that it begins to make its users see the possibilities for different kinds of learning relationship, different kinds of interaction and of course different genres and purposes for literacy. This reflects the wider picture in which the powerful and available new technologies that enable informal learning and social networking are beginning to challenge the control traditionally exerted by educators. The threat of destabilisation seems to result in the exclusion of an increasing number of new technologies from educational settings as educators continually attempt to police the on-line activity of pupils. Perhaps we have to accept the fact that the factory model of education (Gee, 2000) over which teachers had control is slipping away and that educators have to reinvent themselves.

Teachers' concerns are for a safe and orderly space for literacy instruction where controls, both subtle and gross, are evoked to maintain a harmonious learning environment. Moreover, the classroom world is a world in which these relationships are mediated by a set of schooled print literacy practices and instructional routines, powerfully structured by curriculum discourse. Disturbing this fragile ecology is a risky business and strong support and sensitive professional development are required if we are to move beyond some of the curriculum constructs and pedagogical conventions that narrow our vision of literacy. The small-scale initiative described here exemplifies how these wider issues are being played out in local circumstances. But it also shows that teachers need not be the docile operatives of an outdated, centralised curriculum but can be innovative in responding to the potential of powerful new technologies.

In this paper I have argued that research and development in the classroom implementation of digital literacy is needed. It is time to turn the ideas of theorists and innovators into everyday educational practice. In order to do this effectively we need to be sensitive to classroom perspectives – perspectives that are under-represented in the literature. Although the virtual world project was often beleaguered by the location and regulation of access to computers, and technical problems such as server crashes and lost passwords, there are larger issues to address. While the problems of regulated access and sporadic use noted by Selwyn and Bullon (2000) still persist, these obstacles can be overcome – more importantly, teachers need the time to build their confidence and to experiment with new approaches. The sort of work described in this case study places additional demands on teacher time and planning; but the time is necessary in developing coherent educational responses to new literacy practices. In doing this, we cannot afford to ignore the essentially practical nature of most teaching, concerned as it is with questions of 'how to do literacy instruction' with classes of 30 or more children with diverse understanding, skills and dispositions within a particular curriculum framework.

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